

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

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## Spectrum Lighting Photometric Lab

### Luminaire

SGE12BX 60L 35K MD DO101 AR12BX MW WF  
Nom. 12" Diam x 10" H, Open aperture

### Test Number

SP-00686\_M-60L

### Test Date

The results contained in this report pertain only to this IES file.

### Summary of Results

#### Power

Input Watts	44 W
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#### Lumen Output

Output Lumens	4948
Efficacy	112.45 lm/W

#### Luminous Dimensions

0° - 180° Size	-0.97
90° - 270° Size	-0.97
Height	0

#### Spacing Criterion

Two luminaires, plane 0°	0.64
Two luminaires, plane 90°	0.66
Four luminaires	0.64

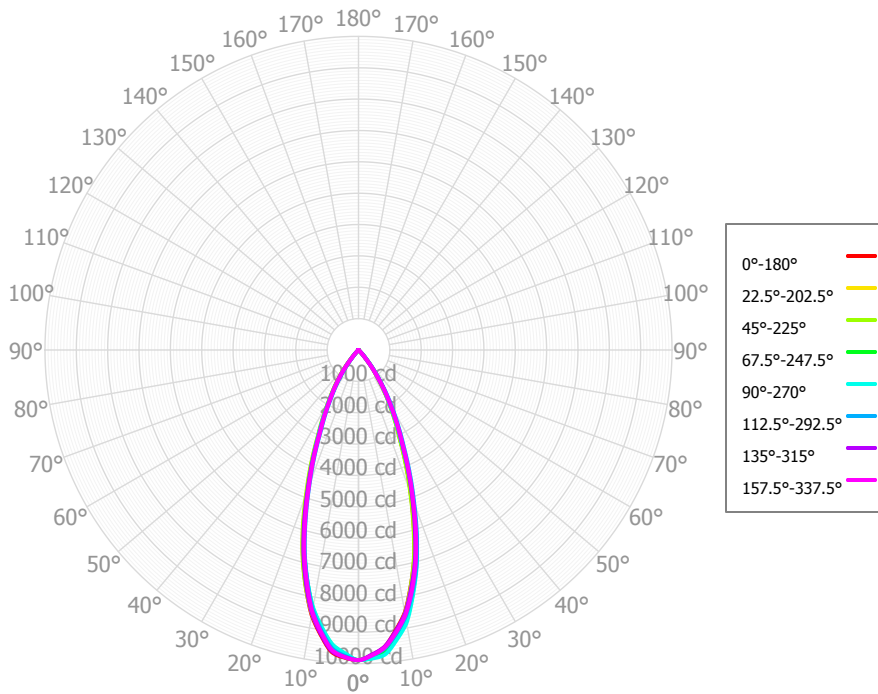
#### Full Beam Angle

0° - 180°	39°
90° - 270°	40°

### IES File Header Contents

Keyword	Value
TEST	SP-00686_M-60L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	6/7/2018
UPDATE	9/27/2019
LUMCAT	SGE12BX 60L 35K MD DO101 AR12BX MW WF
LUMINAIRE	Nom. 12" Diam x 10" H, Open aperture
OTHER	Matte White reflector trim
OTHER	Deep regressed retrofit high output LED downlight
OTHER	BX Series, Medium Beam
OTHER	39.5 Deg Beam Angle
LAMPCAT	N/A
LAMP	N/A, Bridgelux Vero 29
OTHER	Dimmable driver tested at 100% output
OTHER	Tested CCT: 3500K
OTHER	CCT Output: 27K x 0.932, 30K x 1.00, 40K x 1.01
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting, scaled from 80L

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	889.91	17.99%	90.00° - 100.00°	0.06	0.00%
10.00° - 20.00°	1,862.46	37.64%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	1,452.06	29.35%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	664.66	13.43%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	75.06	1.52%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	1.35	0.03%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	0.74	0.02%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.70	0.01%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.64	0.01%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	4,947.59	100.00%	0.00° - 180.00°	4,947.64	100.00%

### Candela Distribution

	0.00°	22.50°	45.00°	67.50°	90.00°	112.50°	135.00°	157.50°	180.00°	202.50°	225.00°	247.50°	270.00°	292.50°	315.00°	337.50°	360.00°
0.00°	9,891.65	9,891.65	9,891.65	9,891.65	9,891.65	9,891.65	9,891.65	9,891.65	9,891.65	9,891.65	9,891.65	9,891.65	9,891.65	9,891.65	9,891.65	9,891.65	9,891.65
2.50°	9,736.68	9,777.07	9,780.91	9,829.90	9,851.59	9,771.32	9,807.26	9,808.64	9,825.63	9,798.84	9,782.99	9,715.24	9,688.47	9,757.57	9,728.83	9,753.03	9,736.68
5.00°	9,509.45	9,575.25	9,569.99	9,684.82	9,746.01	9,561.37	9,649.64	9,613.54	9,680.01	9,603.26	9,580.76	9,451.33	9,437.95	9,561.46	9,505.49	9,532.39	9,509.45
7.50°	9,032.59	9,121.42	9,100.03	9,281.48	9,325.39	9,029.41	9,146.49	9,089.08	9,178.92	9,099.64	9,120.68	8,958.47	8,926.79	9,143.92	9,054.56	9,105.18	9,032.59
10.00°	8,505.48	8,584.25	8,536.51	8,745.58	8,832.40	8,417.42	8,541.54	8,477.76	8,591.05	8,521.45	8,549.67	8,368.79	8,341.86	8,643.26	8,542.50	8,597.67	8,505.48
12.50°	7,703.16	7,803.14	7,710.11	7,983.01	8,014.72	7,544.31	7,699.52	7,593.73	7,749.11	7,663.03	7,764.57	7,554.08	7,537.10	7,928.81	7,768.57	7,867.90	7,703.16
15.00°	6,871.32	6,936.27	6,835.83	7,096.09	7,160.90	6,633.83	6,781.53	6,673.51	6,840.52	6,769.61	6,882.21	6,684.34	6,665.85	7,129.34	6,958.45	7,045.13	6,871.32
17.50°	5,862.17	5,956.06	5,815.93	6,104.76	6,127.03	5,590.50	5,773.44	5,632.05	5,827.80	5,731.77	5,904.24	5,677.06	5,686.98	6,188.70	5,976.68	6,097.96	5,862.17
20.00°	4,869.15	4,932.81	4,823.39	5,053.20	5,105.22	4,577.59	4,734.63	4,622.75	4,785.82	4,719.30	4,879.72	4,700.93	4,672.75	5,187.67	5,010.90	5,095.78	4,869.15
22.50°	3,982.97	4,040.45	3,919.54	4,123.02	4,148.79	3,680.59	3,831.36	3,730.94	3,893.44	3,819.69	3,971.26	3,807.28	3,821.16	4,288.39	4,127.45	4,197.24	3,982.97
25.00°	3,129.95	3,200.72	3,084.46	3,266.42	3,236.11	2,844.14	2,977.18	2,902.30	3,046.91	2,972.34	3,122.36	2,989.69	3,026.40	3,435.08	3,283.33	3,347.85	3,129.95
27.50°	2,529.46	2,557.06	2,492.21	2,590.67	2,591.04	2,261.22	2,354.35	2,321.26	2,431.79	2,383.04	2,467.44	2,385.79	2,410.40	2,766.49	2,660.39	2,674.32	2,529.46
30.00°	1,942.78	1,996.80	1,929.16	2,031.80	1,972.50	1,711.68	1,821.94	1,776.40	1,892.23	1,823.27	1,918.91	1,822.32	1,861.87	2,185.98	2,055.28	2,088.71	1,942.78
32.50°	1,474.45	1,523.58	1,476.58	1,556.28	1,533.28	1,313.01	1,395.11	1,387.63	1,470.73	1,422.27	1,466.14	1,381.79	1,398.43	1,671.42	1,563.71	1,583.28	1,474.45
35.00°	1,017.50	1,090.13	1,045.52	1,137.31	1,104.85	923.81	1,011.95	1,005.12	1,090.98	1,030.92	1,068.60	965.79	969.00	1,190.54	1,086.55	1,120.05	1,017.50
37.50°	676.40	728.96	701.96	773.45	757.70	580.99	663.25	651.81	739.56	697.99	720.63	629.30	623.31	795.29	711.03	734.90	676.40
40.00°	348.20	402.63	385.48	449.37	424.44	269.19	329.86	328.72	398.78	383.15	402.72	328.67	313.05	446.07	357.24	393.67	348.20
42.50°	173.01	198.08	190.43	224.56	213.22	127.19	149.28	158.66	198.34	189.25	195.92	154.71	143.85	220.91	180.77	185.32	173.01
45.00°	8.61	56.33	26.41	74.92	20.25	5.23	40.40	13.19	53.71	17.40	60.93	15.59	38.72	66.94	20.56	55.55	8.61
47.50°	5.65	5.04	13.07	6.58	10.46	3.52	3.80	7.23	7.66	9.66	5.06	8.23	3.60	6.77	10.78	4.14	5.65
50.00°	2.80	2.86	1.75	2.77	1.41	1.95	2.96	2.05	3.77	2.66	2.85	2.19	2.03	3.18	1.82	2.14	2.80
52.50°	1.97	2.02	1.44	1.12	1.51	1.43	2.34	1.81	2.41	2.11	1.91	1.52	1.37	1.69	1.61	1.30	1.97
55.00°	1.15	1.94	1.13	1.29	1.58	0.95	1.85	1.56	2.20	1.57	1.87	0.97	1.18	1.55	1.39	1.23	1.15
57.50°	0.76	1.66	0.88	1.21	1.19	0.85	1.38	1.29	1.76	1.26	1.56	1.01	1.16	1.24	1.09	1.05	0.76
60.00°	0.37	1.26	0.67	0.92	0.81	0.76	0.90	1.01	1.22	0.95	1.02	1.01	1.25	0.81	0.79	0.78	0.37
62.50°	0.48	1.03	0.76	0.79	0.85	0.70	0.81	0.79	0.91	0.72	0.74	0.82	1.06	0.69	0.55	0.68	0.48
65.00°	0.58	0.92	0.83	0.82	0.89	0.66	0.95	0.58	0.72	0.51	0.64	0.69	0.71	0.77	0.33	0.70	0.58
67.50°	0.57	0.85	0.81	0.83	0.88	0.68	0.91	0.51	0.51	0.56	0.66	0.91	0.74	0.68	0.56	0.73	0.57
70.00°	0.58	0.80	0.75	0.84	0.87	0.68	0.76	0.48	0.29	0.59	0.77	1.00	0.97	0.47	0.76	0.78	0.58
72.50°	0.79	0.75	0.56	0.79	0.92	0.58	0.74	0.57	0.42	0.50	0.60	0.70	0.83	0.70	0.82	0.66	0.79
75.00°	0.85	0.69	0.49	0.72	0.86	0.52	0.74	0.59	0.63	0.43	0.34	0.50	0.61	1.08	0.75	0.51	0.85
77.50°	0.66	0.58	0.54	0.40	0.65	0.53	0.72	0.54	0.65	0.36	0.66	0.40	0.66	1.19	0.48	0.97	0.66
80.00°	0.53	0.40	0.80	0.44	1.02	0.50	0.74	0.61	0.60	0.28	0.74	0.79	0.63	1.09	0.45	0.98	0.53
82.50°	0.64	0.50	0.53	0.64	0.87	0.54	0.73	0.72	0.49	0.37	0.66	0.67	0.46	0.84	0.46	0.83	0.64
85.00°	0.64	0.93	0.57	0.50	0.64	0.56	0.64	0.70	0.44	0.64	0.67	0.50	0.26	0.64	0.46	0.85	0.64
87.50°	0.53	0.49	0.77	0.52	0.78	0.73	0.64	0.75	0.51	0.46	0.66	0.52	0.30	0.62	0.39	0.59	0.53
90.00°	0.75	0.19	0.55	0.34	0.38	0.65	0.29	0.64	0.22	0.68	0.22	0.24	0.51	0.21	0.42	0.35	0.75
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	<b>0</b>	5,890	5,890	5,890	5,890	5,753	5,753	5,753	5,753	5,497	5,497	5,497	5,263	5,263	5,263	5,049	5,049	4,948
	<b>1</b>	5,652	5,531	5,422	5,324	5,532	5,425	5,327	5,239	5,226	5,149	5,079	5,044	4,984	4,928	4,876	4,829	4,786
	<b>2</b>	5,419	5,208	5,034	4,888	5,313	5,124	4,967	4,833	4,967	4,839	4,728	4,823	4,719	4,628	4,689	4,606	4,532
	<b>3</b>	5,194	4,919	4,706	4,536	5,100	4,852	4,657	4,499	4,726	4,563	4,429	4,609	4,474	4,361	4,501	4,390	4,295
	<b>4</b>	4,979	4,657	4,421	4,241	4,896	4,603	4,385	4,216	4,500	4,315	4,167	4,405	4,248	4,120	4,317	4,184	4,074
	<b>5</b>	4,775	4,419	4,171	3,987	4,700	4,375	4,143	3,970	4,291	4,090	3,936	4,212	4,038	3,902	4,139	3,989	3,869
	<b>6</b>	4,581	4,202	3,948	3,765	4,514	4,165	3,926	3,753	4,095	3,885	3,728	4,030	3,845	3,704	3,968	3,807	3,680
	<b>7</b>	4,398	4,003	3,747	3,567	4,338	3,972	3,730	3,558	3,913	3,697	3,540	3,858	3,666	3,523	3,806	3,635	3,505
	<b>8</b>	4,225	3,820	3,565	3,390	4,171	3,794	3,551	3,383	3,744	3,525	3,369	3,696	3,500	3,356	3,652	3,475	3,343
	<b>9</b>	4,063	3,651	3,399	3,229	4,014	3,629	3,388	3,224	3,586	3,367	3,213	3,545	3,346	3,203	3,507	3,326	3,194
	<b>10</b>	3,910	3,495	3,247	3,082	3,865	3,476	3,238	3,078	3,439	3,221	3,070	3,404	3,204	3,063	3,370	3,187	3,055

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	327.0 fc	3.9 ft
6.5 ft	234.1 fc	4.7 ft
7.5 ft	175.9 fc	5.4 ft
8.0 ft	154.6 fc	5.7 ft
10.0 ft	98.9 fc	7.2 ft
12.0 ft	68.7 fc	8.6 ft
14.0 ft	50.5 fc	10.0 ft
16.0 ft	38.6 fc	11.5 ft
20.0 ft	24.7 fc	14.3 ft
24.0 ft	17.2 fc	17.2 ft
28.0 ft	12.6 fc	20.1 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	144,081	144,081	144,081
<b>45.00°</b>	177	544	417
<b>55.00°</b>	29	29	40
<b>65.00°</b>	20	29	31
<b>75.00°</b>	48	28	48
<b>85.00°</b>	108	95	106

### UGR CIE 190:2010

<b>Ceiling reflectance</b>		<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>	<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>
<b>Wall reflectance</b>		<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>
<b>Plane reflectance</b>		<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Room dimensions</b>		<b>Viewed crosswise</b>					<b>Viewed endwise</b>				
<b>2H</b>	<b>2H</b>	-22.0	-21.1	-21.6	-20.8	-20.5	-23.7	-22.8	-23.4	-22.5	-22.2
	<b>3H</b>	-20.6	-19.8	-20.2	-19.5	-19.1	-20.9	-20.1	-20.5	-19.7	-19.4
	<b>4H</b>	-19.3	-18.5	-18.9	-18.2	-17.8	-19.6	-18.9	-19.2	-18.5	-18.1
	<b>6H</b>	-18.0	-17.3	-17.6	-16.9	-16.5	-18.0	-17.3	-17.6	-17.0	-16.6
	<b>8H</b>	-17.2	-16.6	-16.7	-16.2	-15.8	-17.0	-16.4	-16.5	-16.0	-15.6
	<b>12H</b>	-16.1	-15.5	-15.6	-15.1	-14.6	-16.2	-15.6	-15.8	-15.3	-14.8
<b>4H</b>	<b>2H</b>	-21.9	-21.2	-21.5	-20.8	-20.5	-23.1	-22.3	-22.7	-22.0	-21.6
	<b>3H</b>	-19.9	-19.4	-19.5	-18.9	-18.5	-20.0	-19.4	-19.6	-19.0	-18.6
	<b>4H</b>	-18.5	-17.9	-18.0	-17.5	-17.1	-18.8	-18.2	-18.3	-17.8	-17.4
	<b>6H</b>	-16.7	-16.3	-16.2	-15.8	-15.3	-16.9	-16.5	-16.4	-16.0	-15.5
	<b>8H</b>	-15.7	-15.3	-15.3	-14.9	-14.4	-15.8	-15.4	-15.3	-14.9	-14.4
	<b>12H</b>	-14.4	-14.0	-13.9	-13.5	-13.1	-14.9	-14.5	-14.4	-14.0	-13.5
<b>8H</b>	<b>4H</b>	-18.0	-17.6	-17.5	-17.1	-16.6	-18.3	-17.9	-17.8	-17.4	-16.9
	<b>6H</b>	-15.9	-15.5	-15.3	-15.0	-14.5	-16.1	-15.8	-15.6	-15.3	-14.8
	<b>8H</b>	-14.6	-14.3	-14.1	-13.8	-13.3	-14.8	-14.5	-14.3	-14.0	-13.5
	<b>12H</b>	-12.9	-12.6	-12.3	-12.1	-11.5	-13.7	-13.4	-13.2	-12.9	-12.4
<b>12H</b>	<b>4H</b>	-17.8	-17.4	-17.3	-16.9	-16.5	-18.2	-17.8	-17.7	-17.3	-16.8
	<b>6H</b>	-15.6	-15.3	-15.1	-14.9	-14.3	-15.8	-15.5	-15.3	-15.0	-14.5
	<b>8H</b>	-14.3	-14.0	-13.8	-13.5	-13.0	-14.4	-14.1	-13.9	-13.6	-13.1

Corrected UGR values based on total output lumens

SHR = 1.0